IFW

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By: Lewis J. Kreisler Date: 7-14-05
Lewis J. Kreisler
Reg. No. 38522

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):	Bell, et al.	Atty. Ref.: 18003-D2
Appl. No.:	10/743,649	Art Unit: 1645
Filed:	December 22, 2003	Examiner: R. Zeman
Conf. No.	7498	Customer No. 31976
For:	ONCOLYTIC VIRUS	

* * * * * * * *

July 14, 2005

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

SUPPLEMENTAL COMMUNICATION

This Communication is submitted to supplement the July 11, 2005 Amendment in connection with the above-identified application.

Claims 9-13 have been rejected under 35 U.S.C. §112, first paragraph, on the grounds that biological deposit is allegedly necessary for the enablement of such claims. The July 11, 2005 Amendment argued that the use of mutant VSV strains is widespread, and as evidence cited a number of articles from a number of journals including *Virology* and the *Journal of Virology*.

Many scientific journals require their authors to agree to make biological materials available to the research community. As evidence, applicants enclose herewith the following documents:

- 2005 Instructions to Authors, Journal of Virology (Jan. 2005) 79(1): 1-16.
- Guide for Authors, Virology (as downloaded July 13, 2005)

The Instructions to Authors wishing to publish in the *Journal of Virology* states:

> **"By publishing in the journal, the authors agree that any . . . viruses . . . newly described in the article are available from a national collection or will be made available in a timely fashion and at reasonable cost to members of the scientific community for non-commercial purposes."** (p. 2, left-hand column, last full paragraph) (bolding in original)

The Guide for Authors wishing to publish in *Virology* states:

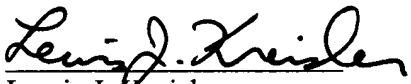
> "Publication of a research article in Virology is taken to imply that the authors are prepared to distribute freely to academic researchers for their own use any materials (e.g., viruses, cells, DNA clones, antibodies) used in the published experiments." (Guide for Authors, Editorial Policies.)

These policies, and similar ones at other journals as well, provide further evidence that the mutant VSV strains recited in claims 9-13 and/or discussed in the July11, 2005 Amendment are publicly available to members of the scientific community without a deposit in accordance with the terms of the Budapest treaty.

Based on the July 11, 2005 Amendment and the preceding remarks, applicants respectfully request reconsideration and withdrawal of the rejection.

It is believed that no fee is required in connection with the filing of this Communication. If any fee is required, the Commissioner is hereby authorized to charge the amount of such fee to Deposit Account No. 50-1677.

Respectfully submitted,



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Enclosures (2)

JOURNAL OF VIROLOGY, Jan. 2005, p. 1–16
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Vol. 79, No. 1

JOURNAL OF VIROLOGY

2005 INSTRUCTIONS TO AUTHORS*

SCOPE

The *Journal of Virology* (JVI) is devoted to the timely dissemination of significant knowledge concerning the viruses of plants, fungi, bacteria, protozoa, and animals. Investigators in areas of basic virology are invited to submit reports of original research that uses the approaches of biochemistry, biophysics, cell biology, epidemiology, genetics, genomics, immunology, molecular biology, morphology, proteomics, physiology, and pathogenesis and immunity. The original articles should contain experimental observations that address a hypothesis, lead to new concepts, and indicate new directions in research. Computational analyses of viruses, virus-like sequences, or viral proteins that advance the field are also appropriate. *The journal will not publish papers that simply provide a new restriction map or nucleotide sequence; identify new immunodominant peptides representing T- or B-cell epitopes; or report the isolation or characterization of monoclonal antibodies, a viral variant, or a new strain or type. Such information or reagents must instead be used in further experimentation to test an idea or relate a clear set of novel conclusions that derive from the data.*

JVI specifically encourages publications relating the viruses under study to their host cells or organisms. In recognition of this emphasis, the sections of the journal relating to viral pathogenesis and immunity and to virus-cell interactions have been specifically set aside and identified in the table of contents. The editors wish to promote the publication of research done at the cell biology-virology-organismic biology interface.

JVI also encourages the submission of manuscripts detailing studies in which viruses or viral genetic elements are used as components of vectors for the delivery of therapeutic genes into animals and plants. These original articles should contain experimental observations that lead to new concepts and understanding relevant to gene delivery, regulated expression of therapeutic genes, or viral pathogenesis. To promote publications in this area, the editors have established a section of the journal for articles relating to gene therapy.

JVI encourages manuscripts that include microarrays and similar parallel profiling analyses of viral or cellular gene expression. However, such manuscripts will be published only if they provide novel insight into the biology of the virus or the infected cell, or if they form the basis for additional experiments that provide such insights. It is expected that the primary data from such analyses will be incorporated into the text or figures or will be made available as supplementary material on the ASM website, a publicly accessible laboratory website, or a public repository (such as the National Center for Biotechnology Information).

ASM publishes a number of journals covering various aspects of microbiology. Each journal has a prescribed scope that must be considered in determining where to publish each manuscript. The following guidelines may be of assistance.

(i) JVI will consider papers that describe the use of antiviral agents in elucidating the basic biological processes of viruses and host cells. Papers dealing with other aspects of antiviral agents and chemotherapy will be considered for *Antimicrobial Agents and Chemotherapy.*

(ii) JVI will consider all papers dealing with the biology of bacteriophages. Studies involving the use of bacteriophages as a diagnostic typing system will be considered by the *Journal of Clinical Microbiology.* Those dealing with phages in relation to industrial microbiology will be considered by *Applied and Environmental Microbiology.*

(iii) Manuscripts describing new methods or improvements in media and culture conditions will not be considered by JVI unless the procedures are applied to the study of basic problems in virology or cell biology. Such manuscripts are more appropriate for *Applied and Environmental Microbiology* or the *Journal of Clinical Microbiology.* By the same token, manuscripts dealing with methods for the production of monoclonal antibodies will not be considered unless the methods have been used to address fundamental questions.

(iv) Manuscripts dealing with clinical investigations, excluding those concerned with the activities of antiviral agents, should be submitted to the *Journal of Clinical Microbiology.* Manuscripts dealing with ecology or environmental studies are more appropriate for *Applied and Environmental Microbiology.*

Questions about these guidelines may be directed to the editor in chief of the journal being considered.

If transfer to another ASM journal is recommended by an editor, the corresponding author will be contacted.

Note that a manuscript rejected by one ASM journal on scientific grounds or on the basis of its general suitability for publication is considered rejected by all other ASM journals.

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The Council Policy Committee (CPC) of the American Society for Microbiology affirms the long-standing position of the Society that microbiologists will work for the proper and beneficent application of science and will call to the attention of the public or the appropriate authorities misuses of microbiology or of information derived from microbiology. ASM members are obligated to discourage any use of microbiology contrary to the welfare of humankind, including the use of microbes as

* Shading indicates material that has been added or updated.

biological weapons. Bioterrorism violates the fundamental principles expressed in the Code of Ethics of the Society and is abhorrent to ASM and its members.

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General Requirements

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By publishing in the journal, the authors agree that any plasmids, viruses, and living materials such as microbial strains and cell lines newly described in the article are available from a national collection or will be made available in a timely fashion and at reasonable cost to members of the scientific community for noncommercial purposes.

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Ultimately, it is an editorial decision whether the material constitutes the substance of a paper.

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Patient Identification

When isolates are derived from patients in clinical studies, do not identify them by using the patients' initials, even as part of a strain designation. Change the initials to numerals or use randomly chosen letters. Do not give hospital unit numbers; if a designation is needed, use only the last two digits of the unit. (Note: Established designations of some viruses and cell lines, although they consist of initials, are acceptable [e.g., JC virus, BK virus, and HeLa cells].)

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It is expected that, when previously published sequence accession numbers are cited in a manuscript, the original citations (e.g., journal articles) will be included in the References section when possible or reasonable.

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EMBL: EMBL Nucleotide Sequence Submissions, European Bioinformatics Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SD, United Kingdom; telephone, 44-1223-494499; fax, 44-1223-494472; e-mail, datasubs@ebi.ac.uk; URL, http://www.ebi.ac.uk.

GenBank: National Center for Biotechnology Information, National Library of Medicine, Bldg. 38A, Rm. 8N-803, Bethesda, MD 20894; telephone, 301-496-2475; fax, 301-480-9241; e-mail, info@ncbi.nlm.nih.gov; URL, http://www.ncbi.nlm.nih.gov.

See p. 13 for nucleic acid sequence formatting instructions.

Structural Determinations

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All manuscripts are considered to be confidential and are reviewed by the editors, members of the editorial board, or qualified ad hoc reviewers. To expedite the review process, authors should recommend at least two reviewers who are not members of their institution(s) and have never been associated with them or their laboratory(ies); please provide their contact information where indicated on the submission form.

Copies of in-press and submitted manuscripts that are important for judgment of the present manuscript should be included as supplemental material to facilitate the review.

When a manuscript is submitted to the journal, it is given a number (e.g., JVI00047-05 version 1) and assigned to one of the editors. **(Always refer to this number in communications with the editor and the Journals Department.)** *It is the responsibility of the corresponding author to inform the coauthors of the manuscript's status throughout the submission, review, and publication processes.* The reviewers operate under strict guidelines set forth in "Guidelines for Reviewers" (http://www.journals.asm.org/misc/reviewguide.shtml) and are expected to complete their reviews expeditiously.

The corresponding author is notified, generally within 4 to 6 weeks after submission, of the editor's decision to

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All submissions to JVI must be made electronically via the Rapid Review online submission and peer review system at the following URL: www.rapidreview.com/ASM2/author.html. (E-mailed submissions will not be accepted.) First-time users must create an Author account, which may be used for submitting to all ASM journals. Instructions for creating an Author account are available at the above URL under the New to Rapid Review? button. The person from whose account a submission is made will be recorded as the corresponding author, and any correspondence will be sent to the e-mail address in that account. Step-by-step instructions for submitting a manuscript via Rapid Review are available from the account holder's My Manuscripts page. Information on file types acceptable for electronic submission can be found under the More About File Formats button.

ORGANIZATION AND FORMAT

On receipt at ASM, an accepted manuscript undergoes an automated preediting, cleanup, and tagging process specific to the particular article type. To optimize this process, manuscripts must be supplied in the correct format and with the appropriate sections and headings.

Type every portion of the manuscript double spaced (a minimum of 6 mm between lines), including figure legends, table footnotes, and References, and number all pages in sequence, including the abstract, figure legends, and tables. Place the last two items after the References section. Manuscript pages should have line numbers. The font size should be no smaller than 12 pt. It is recommended that the following sets of characters be easily distinguishable in the manuscript: the numeral zero (0) and the letter "oh" (O); the numeral one (1), the letter "el" (l), and the letter "eye" (I); and a multiplication sign (×) and the letter "ex" (x). Do not create symbols as graphics or use special fonts that are external to your word processing program; use the "insert symbol" function. Set the page size to 8½ by 11 inches (ca. 21.6 by 28 cm). Italicize or underline any words that should appear in italics, and indicate paragraph lead-ins in bold type.

Authors who are unsure of proper English usage should have their manuscripts checked by someone proficient in the English language. **Manuscripts may be editorially rejected, without review, on the basis of poor English or lack of conformity to the standards set forth in these Instructions.**

Full-Length Papers

Full-length papers should include the elements described in this section.

Title, running title, and byline. Each manuscript should present the results of an independent, cohesive study; thus, numbered series titles are not allowed. Avoid the main title/subtitle arrangement, complete sentences, and unnecessary articles. On the title page, include the title, running title (not to exceed 54 characters and spaces), name of each author, address(es) of the institution(s) at which the work was performed, each author's affiliation, and a footnote indicating the present address of any author no longer at the institution where the work was performed. Place an asterisk after the name of the author to whom inquiries regarding the paper should be addressed (see "Correspondent footnote" below).

Also include on the title page the word count for the abstract and the word count for the text (excluding the references, table footnotes, and figure legends).

Study group in byline. A study group, surveillance team, working group, consortium, or the like (e.g., the Active Bacterial Core Surveillance Team) may be listed as a coauthor in the byline if its contributing members satisfy the requirements for authorship and accountability as described in these Instructions. The names (and institutional affiliations if desired) of the contributing members only should be listed in a separate paragraph in the Acknowledgments section. (A footnote directing readers from the group's name in the byline to the contributing individuals' names in the Acknowledgments section will be added by the ASM editorial staff. The list of study group members may *not* be provided in a footnote to the byline, in the text, or in an Appendix.)

If the contributing members of the group associated with the work do not fulfill the criteria of substantial contribution to and responsibility for the paper, the group may not be listed in the author byline. Instead, it and the names of its contributing members may be listed in the Acknowledgments section.

Correspondent footnote. The complete mailing address, a single telephone number, a single fax number,

and a single e-mail address for the corresponding author should be included on the title page of the manuscript. This information will be published in the article as a footnote to facilitate communication, and the e-mail address will be used to notify the corresponding author of availability of proofs and, later, of the PDF file of the published article.

Abstract. Limit the abstract to **250 words or fewer** and concisely summarize the basic content of the paper without presenting extensive experimental details. Avoid abbreviations and references, and do not include diagrams. When it is essential to include a reference, use the same format as shown for the References section but omit the article title. Because the abstract will be published separately by abstracting services, it must be complete and understandable without reference to the text.

Introduction. The introduction should supply sufficient background information to allow the reader to understand and evaluate the results of the present study without referring to previous publications on the topic. The introduction should also provide the hypothesis that was addressed or the rationale for the present study. Choose references carefully to provide the most salient background rather than an exhaustive review of the topic.

Materials and Methods. The Materials and Methods section should include sufficient technical information to allow the experiments to be repeated. When centrifugation conditions are critical, give enough information to enable another investigator to repeat the procedure: make of centrifuge, model of rotor, temperature, time at maximum speed, and centrifugal force ($\times g$ rather than revolutions per minute). For commonly used materials and methods (e.g., media and protein concentration determinations), a simple reference is sufficient. If several alternative methods are commonly used, it is helpful to identify the method briefly as well as to cite the reference. For example, it is preferable to state "cells were broken by ultrasonic treatment as previously described (9)" rather than to state "cells were broken as previously described (9)." The reader should be allowed to assess the method without constant reference to previous publications. Describe new methods completely and give sources of unusual chemicals, equipment, or microbial strains. When large numbers of microbial strains or mutants are used in a study, include tables identifying the immediate sources (i.e., sources from whom the strains were obtained) and properties of the strains, mutants, bacteriophages, plasmids, etc.

A method, strain, etc., used in only one of several experiments reported in the paper may be described in the Results section or very briefly (one or two sentences) in a table footnote or figure legend. It is expected that the sources from whom the strains were obtained will be identified.

Results. In the Results section, include the rationale or design of the experiments as well as the results; reserve extensive interpretation of the results for the Discussion section. Present the results as concisely as possible in **one** of the following: text, table(s), or figure(s). Data in tables (e.g., cpm of radioactivity) should not contain more significant figures than the precision of the measurement allows. Illustrations (particularly photomicrographs and electron micrographs) should be limited to those that are absolutely necessary to show the experimental findings. Number figures and tables in the order in which they are cited in the text, and be sure to cite all figures and tables.

Discussion. The Discussion should provide an interpretation of the results in relation to previously published work and to the experimental system at hand and should not contain extensive repetition of the Results section or reiteration of the introduction. In short papers, the Results and Discussion sections may be combined.

Acknowledgments. The source of any financial support received for the work being published must be indicated in the Acknowledgments section. (It will be assumed that the absence of such an acknowledgment is a statement by the authors that no support was received.) The usual format is as follows: "This work was supported by Public Health Service grant CA-01234 from the National Cancer Institute."

Recognition of personal assistance should be given as a separate paragraph, as should any statements disclaiming endorsement or approval of the views reflected in the paper or of a product mentioned therein.

References. (i) Works listed in References. The References section must include all journal articles (both print and online), books and book chapters (both print and online), patents, theses and dissertations, and published conference proceedings (not abstracts; see below), as well as in-press journal articles, book chapters, and books (publication title must be given). All listed references **must** be cited in the text. Arrange the citations in **alphabetical order** (letter by letter, ignoring spaces and punctuation) by first author and **number consecutively.** Provide the names of **all** the authors for each reference. Since title and byline information that is downloaded from PubMed does not show accents, italics, or special characters, authors should refer to the PDF files or hard-copy versions of the articles and incorporate the necessary corrections in the submitted manuscript. Abbreviate journal names according to *BIOSIS Serial Sources* (BIOSIS, Philadelphia, Pa., 2004). Cite each listed reference by number in the text.

Follow the styles shown in the examples below.

Print references:

1. **Arendsen, A. F., M. Q. Solimar, and S. W. Ragsdale.** 1999. Nitrate-dependent regulation of acetate biosynthesis and nitrate respiration by *Clostridium thermoaceticum*. J. Bacteriol. **181:**1489–1495.

2. **Cox, C. S., B. R. Brown, and J. C. Smith.** J. Gen. Genet., in press.* {*Article title is optional; journal title is mandatory.*}
3. **De Ley, J., M. Gillis, and J. Swings.** 1984. Family VI. *Acetobacteraceae* Gillis and De Ley 1980, 23^{VP}, p. 267–278. *In* N. R. Krieg and J. G. Holt (ed.), Bergey's manual of systematic bacteriology, vol. 1. Williams & Wilkins, Baltimore, Md.
4. **Dunne, W. M., Jr., F. S. Nolte, and M. L. Wilson.** 1997. Cumitech 1B, Blood cultures III. Coordinating ed., J. A. Hindler. American Society for Microbiology, Washington, D.C.
5. **Fitzgerald, G., and D. Shaw.** *In* A. E. Waters (ed.), Clinical microbiology, in press. EFH Publishing Co., Boston, Mass.* {*Chapter title is optional.*}
6. **Gershon, A. A., P. LaRussa, and S. P. Steinberg.** 1999. Varicella-zoster virus, p. 900–911. *In* P. R. Murray, E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
7. **Green, P. N., D. Hood, and C. S. Dow.** 1984. Taxonomic status of some methylotrophic bacteria, p. 251–254. *In* R. L. Crawford and R. S. Hanson (ed.), Microbial growth on C_1 compounds. Proceedings of the 4th International Symposium. American Society for Microbiology, Washington, D.C.
8. **Odell, J. C.** 1970. Process for batch culturing. U.S. patent 484,363,770. {*Include the name of the patented item/process if possible.*}
9. **O'Malley, D. R.** 1998. Ph.D. thesis. University of California, Los Angeles. {*Title is optional.*}

* A reference to an in-press ASM publication should state the control number (e.g., JVI00577-05) if it is a journal article or the name of the publication if it is a book.

Online references:

1. **Dimick, J. B., H. G. Welch, and J. D. Birkmeyer.** 18 August 2004, posting {*or* revision} date. Surgical mortality as an indicator of hospital quality. JAMA **292**. [Online.] http://jama.ama-assn.org/cgi/content/short/292/7/847. {*For online journals; page numbers may not be available.*}
2. **Sullivan, C. J. (ed.).** 1999–2001. Fungi: an evolving electronic resource for the microbiological community. ASM Press. [Online.] http://link.asmusa.de/link/service/books/91090. Accessed 7 September 2001. {*For online-only books.*}
3. **Zellnitz, F., and P. M. Foley.** 2 October 1998, posting {*or* revision} date. History of virology. Am. Virol. J. **1**:30–50. [Online.] http://wwwavj.html. {*For online-only journals; page numbers may not be available.*}
4. **Zheng, Z., and J. Zou.** 5 September 2001. The initial step of the glycerolipid pathway: identification of glycerol-3-phosphate/dihydroxyacetone phosphate dual substrate acyltransferases in Saccharomyces cerevisiae. J. Biol. Chem. doi:10.1074/jbc.M104749200. {*For papers published online in manuscript form.*}

NOTE: A URL or DOI is necessary for each online-only reference; a posting or accession date is required for any online reference that is periodically updated or changed.

(ii) Items cited in the text. References to unpublished data, articles submitted for publication, meeting abstracts (including those published in journal supplements), personal communications, letters (irrespective of type) and authors' replies to letters, company publications, patent applications and patents pending, computer software, databases, and websites should be made parenthetically in the text as follows.

. . .similar results (R. B. Layton and C. C. Weathers, unpublished data).

. . .system was used (J. L. McInerney, A. F. Holden, and P. N. Brighton, submitted for publication).

. . .in mitochondria (S. De Wit, C. Thioux, and N. Clumeck, Abstr. 34th Intersci. Conf. Antimicrob. Agents Chemother., abstr. 114, 1994).

. . .for other bacteria (A. X. Jones, personal communication).

. . .discussed previously (L. B. Jensen, A. M. Hammerum, R. L. Poulsen, and H. Westh, Letter, Antimicrob. Agents Chemother. **43**:724–725, 1999).

. . . discussed previously (S. L. W. On and P. A. R. Vandamme, Authors' Reply to Letter, J. Clin. Microbiol. **39**:2751–2752, 2001).

. . .the manufacturer (Sigma manual, Sigma Chemical Co., St. Louis, Mo.).

. . .this process (V. R. Smoll, 20 June 1999, Australian Patent Office). {*For non-U.S. patent applications, give the date of publication of the application.*}

. . .information found at the XYZ website (http://cbx_iou.pgr).

. . . the ABC program (version 2.2; Department of Microbiology, State University [http://www.stu.micro]).

URLs for companies that produce any of the products mentioned in your study or for products being sold may NOT be included in the article. However, company URLs that permit access to scientific data related to the study or to shareware used in the study are permitted.

Notes

The Note format is intended for the presentation of brief observations that do not warrant full-length papers. Submit Notes in the same way as full-length papers. *They receive the same review, they are not published more rapidly than full-length papers, and they are not considered preliminary communications.*

Each Note must have an **abstract of no more than 100 words.** Do not use section headings in the body of the

Note; combine methods, results, and discussion in a single section. Paragraph lead-ins are permissible. The text should be kept to a minimum and **should not exceed 1,200 words**; the total number of figures and tables should not exceed four. **Materials and methods should be described in the text, not in figure legends or table footnotes.** Present acknowledgments as in full-length papers, but do not use a heading. The References section is identical to that of full-length papers.

Minireviews

Minireviews are brief (**limit of 6 printed pages exclusive of references**) summaries of important developments in virology research. They must be based on published articles and may address any subject within the scope of the journal.

Minireviews are solicited by the Minireview editor and are subject to review. Unsolicited reviews will not be considered. Ideas for Minireviews may be sent to the Minireview editor. Manuscripts should be submitted via Rapid Review.

Minireviews do not have abstracts. In the Abstract section of the submission form, put "Not applicable." The body of the Minireview may either have section headings or be set up like a Note (see above).

Guest Commentaries

Guest Commentaries are invited communications written in response to invitations issued by the editors and concern topics of interest to the broad readership of the journal that are not necessarily covered by Minireviews. They should raise issues of interest to the community of virologists, initiate or focus discussion, or propose position or consensus statements for leadership groups in research. Review of the literature, methods and other how-to papers, and responses targeted at a specific published paper are not appropriate. Guest Commentaries are subject to review.

The length may not exceed 2 printed pages, and the format is like that of a Minireview (see above). Commentaries should be submitted via Rapid Review.

Letters to the Editor

Two types of Letters to the Editor may be submitted. The first type (Comment Letter) is intended for comments on articles published previously in the journal and must cite published references to support the writer's argument. The second type (New-Data Letter) may report new, concise findings that are not appropriate for publication as full-length papers or Notes.

Letters may be **no more than 500 words long and must be typed double spaced**. Refer to a recently published Letter for correct formatting. Note that authors and affiliations are listed at the foot of the Letter. Provide only the primary affiliation for each author. Authors with the same affiliation must be listed together. The order of author names will be changed as necessary by the Journals staff to avoid repetition of an address.

All Letters to the Editor must be submitted electronically, and the type of Letter (New Data or Comment) must be selected from the drop-down list in the submission form. For Letters commenting on published articles, the cover letter should state the volume and issue in which the article was published, the title of the article, and the last name of the first author. In the Abstract section of the submission form, put "Not applicable." Letters to the Editor do not have abstracts. Both types of Letter must have a title, which must appear on the manuscript and on the submission form. Figures and tables should be kept to a minimum.

If the Letter is related to a published article, it will be sent to the editor who handled the article in question. If the editor believes that publication is warranted, he will solicit a reply from the corresponding author of the article and make a recommendation to the editor in chief. Final approval for publication rests with the editor in chief.

New-Data Letters will be assigned to an editor according to subject matter and will be reviewed by that editor and the editor in chief. Final approval for publication rests with the editor in chief.

Please note that some indexing/abstracting services do not include Letters to the Editor in their databases.

Errata

The Erratum section provides a means of correcting errors that occurred during the writing, typing, editing, or printing (e.g., a misspelling, a dropped word or line, or mislabeling in a figure) of a published article. Send Errata directly to the ASM Journals Department (1752 N St., N.W., Washington, DC 20036-2904, USA), both on disk and in hard copy (**only one hard copy is necessary). Please see a recent issue for correct formatting.**

Authors' Corrections

The Author's Correction section provides a means of correcting errors of omission (e.g., author names or citations) and errors of a scientific nature that do not alter the overall basic results or conclusions of a published article.

For omission of an author's name, the authors of the article and the author whose name was inadvertently omitted must agree, in writing, to publication of the Correction. For other issues involving authorship, including contributions and use or ownership of data and/or materials, all disputing parties must agree, in writing, to publication of the Correction. Copies of the agreement letters must accompany the Correction and be sent directly to the Journals Department. Send the Correction both on disk and in hard copy (**only one hard copy is necessary). Please see a recent issue for correct formatting.**

Corrections of a scientific nature (e.g., an incorrect unit of measurement or order of magnitude used throughout; contamination of one of numerous cultures; or misidentification of a mutant strain, causing erroneous data for only

a portion [noncritical] of the study) must be sent, both on disk and in hard copy, directly to the editor who handled the article and must be accompanied by *signed letters of agreement* from all of the authors of the article. If the editor believes that publication is warranted, he will send the Correction to the Journals Department for publication. Note that the addition of new data is not permitted.

Retractions

Retractions are reserved for major errors or breaches of ethics that, for example, may call into question the source of the data or the validity of the results and conclusions of an article. Send a Retraction and an accompanying explanatory letter *signed by all of the authors* directly to the editor in chief of the journal. The editor who handled the paper and the chairman of the ASM Publications Board will be consulted. If all parties agree to the publication and content of the Retraction, it will be sent to the Journals Department for publication.

ILLUSTRATIONS AND TABLES

Digital files that are acceptable for production (see below) must be provided for all illustrations on return of the modified manuscript. (On initial submission, the entire paper may be submitted in PDF format.)

We strongly recommend that before returning their modified manuscripts, authors check the acceptability of their digital images for production by running their files through Rapid Inspector, a tool provided at the following URL: http://rapidinspector.cadmus.com/mw/. Rapid Inspector is an easy-to-use Web-based application that takes only minutes to identify problems that may cause the file to fail at any point during the production process.

Illustrations may be continuous-tone photographs, line drawings, or composites. Color graphics may be submitted, but the cost of printing in color must be borne by the author. Suggestions about how to reduce costs and ensure accurate color reproduction are given below.

In general, digital files are not used for tables at the production stage; however, restrictions on file formats still apply (see the section on Tables below).

Since the contents of computer-generated images can be manipulated for better clarity, the Publications Board at its May 1992 meeting decreed that a description of the software/hardware used should be put in the figure legend(s).

Illustrations

File types and formats. As mentioned above, **illustrations may be supplied as PDF files for reviewing purposes only on initial submission; in fact, we recommend this option to minimize file upload time. At the modification stage, production quality digital files must be submitted:** TIFF or EPS files from supported applications or PowerPoint files (black and white only). Except

Macintosh

Application	File type	
	Black and white	Color (CMYK)[a]
Adobe Illustrator 6.0, 7.0, 8.0, 9.0, and 10.0	EPS	EPS
Adobe InDesign 1.0	EPS	EPS
Adobe PageMaker 6.5	EPS	EPS
Adobe Photoshop		
4.0	TIFF	TIFF
5.0	TIFF	TIFF
5.0 LE	TIFF	N/A[b]
5.5	TIFF	TIFF
6.0	TIFF	TIFF
ChemDraw Pro 5.0	EPS/TIFF	EPS/TIFF
Corel Photo-Paint 8.0	TIFF	EPS
CorelDRAW 6.0 and 8.0	EPS/TIFF	EPS
Deneba Canvas 5.0, 6.0, 7.0, and 8.0	EPS/TIFF	EPS
Macromedia FreeHand 7.0, 8.0, and 9.0	EPS	EPS
PowerPoint '98 and 2001	PPT[c]	N/A[b]
Prism 3 by GraphPad	TIFF	N/A[b]
QuarkXpress	EPS	EPS
Synergy Kaleidagraph 3.08 and 3.51	EPS	N/A[b]

[a] Color graphics must be saved and printed in the CMYK mode, *not* RGB.
[b] ASM accepts only black-and-white, not color, graphics created with Kaleidagraph, Adobe Photoshop 5.0 LE, Prism 3 by GraphPad, and PowerPoint.
[c] For instructions on saving PowerPoint files, refer to the Cadmus digital art website at http://cjs.cadmus.com/da.

Windows

Application	File type	
	Black and white	Color (CMYK)[a]
Adobe Illustrator 7.0, 8.0, and 9.0	EPS	EPS
Adobe InDesign 1.0	EPS	EPS
Adobe PageMaker 6.5	EPS	EPS
Adobe Photoshop		
4.0	TIFF	TIFF
5.0	TIFF	TIFF
5.0 LE	TIFF	N/A[b]
5.5	TIFF	TIFF
6.0	TIFF	TIFF
ChemDraw Pro 5.0	EPS/TIFF	EPS/TIFF
Corel Photo-Paint 8.0 and 9.0	TIFF	EPS
CorelDRAW 7.0, 8.0, and 9.0	EPS/TIFF	EPS
Deneba Canvas 6.0 and 7.0	EPS/TIFF	EPS
Macromedia FreeHand 7.0, 8.0, and 9.0	EPS	EPS
PowerPoint '97, 2000, and XP	PPT[c]	N/A[b]
Prism 3 by GraphPad	TIFF	N/A[b]
QuarkXpress	EPS	EPS
SigmaPlot 8.01	EPS	EPS

[a] Color graphics must be saved and printed in the CMYK mode, *not* RGB.
[b] ASM accepts only black-and-white, not color, graphics created with Adobe Photoshop 5.0 LE, Prism 3 by GraphPad, and PowerPoint.
[c] For instructions on saving PowerPoint files, refer to the Cadmus digital art website at http://cjs.cadmus.com/da.

for figures produced in PowerPoint, all graphics submitted with modified manuscripts must be bitmap, grayscale, or CMYK (*not* RGB). Acceptable file types and formats for production are given in the tables below. More-detailed instructions for preparing illustrations are available on the World Wide Web at http://cjs.cadmus.com/da. Please review this information before preparing your files. If you require additional information, please send an e-mail inquiry to digitalart@cadmus.com.

Minimum resolution. It is extremely important that a high enough resolution is used. Note, however, that the higher the resolution, the larger the file and the longer the upload time. Publication quality will *not* be improved by using a resolution higher than the minimum. Minimum resolutions are as follows:

300 dpi for grayscale and color
600 dpi for lettering
1,200 dpi for line art

Resolution requirements do not apply to graphics created in PowerPoint.

Size. All graphics **MUST be submitted at their intended publication size**; that is, the image uploaded should be 100% of its print dimensions so that no reduction or enlargement is necessary. Include only the significant portion of an illustration. White space must be cropped from the image, and excess space between panel labels and the image must be eliminated.

Maximum width for a 1-column figure: 3⅝ inches (ca. 8.4 cm)
Maximum width for a 2-column figure: 6⅞ inches (ca. 17.4 cm)
Minimum width for a 2-column figure: 4¼ inches (10.8 cm)
Maximum height: 9⅛ inches (25.3 cm)

Contrast. Illustrations must contain sufficient contrast to withstand the inevitable loss of contrast and detail inherent in the printing process. See also the section on color illustrations below.

Labeling and assembly. All final lettering, labeling, tooling, etc., MUST be incorporated into the figures. It cannot be added at a later date. If a figure number is included, it **must** appear well outside the boundaries of the image itself. (Numbering may need to be changed at the copyediting stage.) Each figure must be uploaded as a separate file, and any multipanel figures must be assembled into one file; i.e., rather than uploading a separate file for each panel in a figure, assemble all panels in one piece and supply them as one file.

Fonts. To avoid font problems, set all type in one of the following Type 1 PostScript fonts: Helvetica, Times Roman, European PI, Mathematical PI, or Symbol. All fonts other than these five must be converted to paths (or outlines) in the application with which they were created. For font use in PowerPoint images, refer to the Cadmus digital art website, http://cjs.cadmus.com/da.

Compression. Images created with Macintosh applications may be compressed with Stuffit. Images created with Windows applications may be compressed with WINZIP.

Color illustrations. Because the process of placing ink on paper by using printing presses is different from that used to produce a photo print or a laser print and the color rendition on images viewed on a monitor depends to some extent on monitor resolution, some differences in color and contrast between the image you submit and the image printed in the journal or published online will be evident. (Figures showing red or green fluorescence and those with a significant range of colors may be difficult or impossible to reproduce exactly.) Color illustrations must be saved as either TIFF or EPS files, according to the application used (see charts above). The mode of the TIFF or EPS file must be CMYK, *not* RGB. Graphics in the RGB color space are intended for display on a monitor only and will not separate correctly for printing.

The cost of printing in color must be borne by the author. The current color costs may be accessed from the submission form in Rapid Review. Adherence to the following guidelines, in addition to the general ones above, will help to minimize costs and to ensure color reproduction that is as accurate as possible.

Include only the significant portions of illustrations so that the number of printed pages containing color figures is minimized. The individual panels of a single figure must be assembled in a single file, including any necessary labels. Optimal color reproduction will be obtained if the composites comprise panels containing similar colors of similar lightness or darkness. If necessary, make unlike panels into separate figures/files; this will increase the cost, but the color rendition will be more accurate since the two panels will be "scanned" separately.

Drawings

Submit graphs, charts, complicated chemical or mathematical formulas, diagrams, and other drawings as finished products not requiring additional artwork or typesetting. No part of the graph or drawing may be handwritten. *All* elements, including letters, numbers, and symbols, *must* be easily readable, and both axes of a graph must be labeled. Keep in mind that the journal is published both in print and online and that the same electronic files submitted by the authors are used to produce both.

When creating line art, please use the following guidelines:

1. **All art MUST be submitted at its intended publication size.** For acceptable dimensions, see the Size section above.

2. **Avoid using screens (i.e., shading)** in line art. It can be difficult and time-consuming to reproduce these images without moiré patterns. Various pattern backgrounds are preferable to screens as long as the patterns are not imported from another application. If you must use images containing screens,
   - Generate the image at line screens of 85 lines per inch or lower.
   - When applying multiple shades of gray, differentiate the gray levels by at least 20%.
   - Never use levels of gray below 20% or above 70% as they will fade out or become totally black upon scanning and reduction.
3. Use thick, solid lines that are no finer than 1 point in thickness.
4. No type should be smaller than 9 point at the final publication size.
5. Avoid layering type directly over shaded or textured areas.
6. Avoid the use of reversed type (white lettering on a black background).
7. Avoid heavy letters, which tend to close up, and unusual symbols, which the printer may not be able to reproduce in the legend.
8. If colors are used, avoid using similar shades of the same color and avoid very light colors.

In figure ordinate and abscissa scales (as well as table column headings), **avoid the ambiguous use of numbers with exponents.** Usually, it is preferable to use the Système International d'Unités (SI) symbols (μ for 10^{-6}, m for 10^{-3}, k for 10^{3}, M for 10^{6}, etc.). A complete listing of SI symbols can be found in the International Union of Pure and Applied Chemistry (IUPAC) "Manual of Symbols and Terminology for Physicochemical Quantities and Units" (Pure Appl. Chem. **21**:3–44, 1970). Thus, a representation of 20,000 cpm on a figure ordinate is to be made by the number 20 accompanied by the label kcpm.

When powers of 10 must be used, the journal requires that the exponent power be associated with the number shown. In representing 20,000 cells per ml, the numeral on the ordinate would be "2" and the label would be "10^{4} cells per ml" (not "cells per ml $\times$ 10^{-4}"). Likewise, an enzyme activity of 0.06 U/ml would be shown as 6 accompanied by the label 10^{-2} U/ml. The preferred designation would be 60 mU/ml (milliunits per milliliter).

Presentation of Nucleic Acid Sequences

Nucleic acid sequences of limited length which are the primary subject of a study may be presented freestyle in the most effective format. Longer nucleic acid sequences must be presented as figures in the following format to conserve space. Print the sequence in lines of approximately 100 to 120 nucleotides in a nonproportional (monospace) font that is easily legible when published with a line length of 6 inches (ca. 15.2 cm). If possible, lines of nucleic acid sequence should be further subdivided into blocks of 10 or 20 nucleotides by spaces within the sequence or by marks above it. Uppercase and lowercase letters may be used to designate the exon-intron structure, transcribed regions, etc., if the lowercase letters remain legible at a 6-inch (ca. 15.2-cm) line length. Number the sequence line by line; place numerals, representing the first base of each line, to the left of the lines. **Minimize spacing between lines of sequence, leaving room only for annotation of the sequence.** Annotation may include boldface, underlining, brackets, boxes, etc. Encoded amino acid sequences may be presented, if necessary, immediately above or below the first nucleotide of each codon, by using the single-letter amino acid symbols. Comparisons of multiple nucleic acid sequences should conform as nearly as possible to the same format.

Figure Legends

Legends should provide enough information so that the figure is understandable without frequent reference to the text. However, detailed experimental methods must be described in the Materials and Methods section, not in a figure legend. A method that is unique to one of several experiments may be reported in a legend only if the discussion is very brief (one or two sentences). Define all symbols used in the figure and define all abbreviations that are not used in the text.

Tables

Tables that contain artwork, chemical structures, or shading must be submitted as illustrations in an acceptable format at the modification stage. Regular tables must be submitted either as Word, WordPerfect, or Acrobat PDF files. Note that a straight Excel file is *not* an acceptable format. Excel files must either be embedded in a Word or WordPerfect document or be converted to PDF *before* being uploaded. Although PDF files and word processing files with embedding are *not* generally acceptable for production purposes, they *are* acceptable for tables. Unlike the other parts of a manuscript, tables are not produced from the author's source files. They must be rekeyed by the printer before going into a page composition program. **If your modified manuscript contains PDF tables, select "for reviewing purposes only" at the beginning of the file upload process.**

Tables should be formatted as follows. Arrange the data so that **columns of like material read down, not across.** The headings should be sufficiently clear so that the meaning of the data is understandable without reference to the text. See the Abbreviations section (p. 15) of these Instructions for those that should be used in tables. Explanatory footnotes are acceptable, but more extensive table "legends" are not. Footnotes should not include detailed descriptions of the experiment. Tables

must include enough information to warrant table format; those with fewer than six pieces of data will be incorporated into the text by the copy editor. Table 1 is an example of a well-constructed table.

TABLE 1. Distribution of protein and ATPase in fractions of dialyzed membranes[a]

Membrane	Fraction	ATPase	
		U/mg of protein	Total U
Control	Depleted membrane	0.036	2.3
	Concentrated supernatant	0.134	4.82
E1 treated	Depleted membrane	0.034	1.98
	Concentrated supernatant	0.11	4.6

[a] Specific activities of ATPase of nondepleted membranes from control and treated bacteria were 0.21 and 0.20, respectively.

Cover Photographs and Drawings

JVI publishes photographs and drawings on the front cover. Invitations are issued to authors whose manuscripts are returned for modification or whose manuscripts have been accepted for publication in JVI; material should be related to the work presented in the manuscript. Unsolicited material will also be considered, however. No material submitted for consideration will be returned to the author. Copyright for the chosen material must be transferred to ASM. A short description of the cover material will be included at the end of the table of contents or the author index of the issue. Technical specifications are available from the cover editor, Daniel DiMaio (e-mail: daniel.dimaio@yale.edu).

NOMENCLATURE

Chemical and Biochemical Nomenclature

The recognized authority for the names of chemical compounds is *Chemical Abstracts* (Chemical Abstracts Service, Ohio State University, Columbus) and its indexes. *The Merck Index*, 13th ed. (Merck & Co., Inc., Whitehouse Station, N.J., 2001), is also an excellent source. For biochemical terminology, including abbreviations and symbols, consult *Biochemical Nomenclature and Related Documents* (1978; reprinted for The Biochemical Society, London, England) and the instructions to authors of the *Journal of Biological Chemistry* and the *Archives of Biochemistry and Biophysics* (first issues of each year).

Do not express molecular weight in daltons; molecular weight is a unitless ratio. Molecular mass is expressed in daltons.

For enzymes, use the recommended (trivial) name assigned by the Nomenclature Committee of the International Union of Biochemistry (IUB) as described in *Enzyme Nomenclature* (Academic Press, Inc., New York, N.Y., 1992). If a nonrecommended name is used, place the proper (trivial) name in parentheses at first use in the abstract and text. Use the EC number when one has been assigned, and express enzyme activity either in katals (preferred) or in the older system of micromoles per minute.

For nomenclature of restriction enzymes, DNA methyltransferases, homing endonucleases, and their genes, refer to the article by Roberts et al. (Nucleic Acids Res. **31**:1805–1812, 2003).

Nomenclature of Mice

For mouse strain and genetic nomenclature, ASM encourages authors to refer to the guidelines set forth by the International Committee on Standardized Genetic Nomenclature for Mice, available on the Mouse Genome Database home page at http://www.informatics.jax.org and in *Genetic Variants and Strains of the Laboratory Mouse*, 3rd ed. (M. F. Lyon et al., ed., Oxford University Press, Oxford, England, 1996).

Nomenclature of Viruses

Names used for viruses should be those approved by the International Committee on Taxonomy of Viruses (ICTV) and published in *Virus Taxonomy: Classification and Nomenclature of Viruses, Seventh Report of the International Committee on Taxonomy of Viruses* (M. H. V. van Regenmortel et al., ed., Academic Press, San Diego, Calif., 2000). In addition, the recommendations of the ICTV regarding the use of species names should generally be followed: when the entire species is discussed as a taxonomic entity, the species name, like other taxa, is italic and has the first letter and any proper nouns capitalized (e.g., *Tobacco mosaic virus*, *Murray Valley encephalitis virus*). When the behavior or manipulation of individual viruses is discussed, the vernacular (e.g., tobacco mosaic virus, Murray Valley encephalitis virus) should be used. If desired, synonyms may be added parenthetically when the name is first mentioned. Approved generic (or group) and family names may also be used.

Nomenclature of Bacteria

Binary names, consisting of a generic name and a specific epithet (e.g., *Escherichia coli*), should be used for all bacteria. Names of categories at or above the genus level may be used alone, but specific and subspecific epithets may not. A specific epithet must be preceded by a generic name, written out in full the first time it is used in a paper. Thereafter, the generic name should be abbreviated to the initial capital letter (e.g., *E. coli*), provided there can be no confusion with other genera used in the paper. Names of all taxa (kingdoms, phyla, classes, orders, families, genera, species, and subspecies) are printed in italics; strain designations and numbers are not.

Genetic Nomenclature

To facilitate accurate communication, **it is important that standard genetic nomenclature be used whenever possible and that deviations or proposals for new naming systems be endorsed by an appropriate authoritative body.** Review and/or publication of submitted manuscripts that contain new or nonstandard nomenclature may be delayed by the editor or the Journals Department so that they may be reviewed by the Genetics and Genomics Committee of the ASM Publications Board. Before submission of manuscripts, authors may direct questions on genetic nomenclature to the committee's chairman: Maria Costanzo (e-mail: maria@genome.stanford.edu). Such a consultation should be mentioned in the manuscript submission letter.

When appropriate for viral genetic systems, use the recommendations of Demerec et al. (Genetics **54**:61–76, 1966) as a guide.

(i) Phenotype designations must be employed when mutant loci have not been identified or mapped. They can also be used to identify the protein product of a gene, e.g., the OmpA protein. Phenotype designations generally consist of three-letter symbols; these are *not* italicized and the first letter of the symbol is capitalized. It is preferable to use Roman or Arabic numerals (instead of letters) to identify a series of related phenotypes. Thus, a series of bacteriocin-tolerant mutants might be designated TolI, TolII, TolIII, etc., or a series of nucleic acid polymerase mutants might be designated Pol1, Pol2, Pol3, etc. Wild-type characteristics can be designated Tol^+ or Pol^+, and, when necessary for clarity, negative superscripts (Tol^- Pol^-) can be used to designate mutant characteristics. Lowercase superscript letters may be used to further delineate phenotypes (e.g., Str^r for streptomycin resistance). Phenotype designations should be defined.

(ii) Genotype designations are also indicated by three-letter locus symbols. These are lowercase italic (e.g., *pol src*). If several loci govern related functions, these are distinguished by italicized capital letters following the locus symbol.

(iii) Wild-type alleles are indicated with a superscript plus (ara^+ his^+). A superscript minus is not used to indicate a mutant locus; thus, one refers to an *ara* mutant rather than an ara^- strain.

(iv) The rules for genetic nomenclature of viruses (phages) differ from those of bacteria. As a general rule, the entire description of a virus is italicized, including the designations *am* or *sus* (amber suppressible) and *ts* (temperature sensitive). Superscripts are employed to indicate hybrid genomes. Genetic symbols may be one, two, or three letters. For example, a mutant strain of λ might be designated λ *c*I857 *int*2 *red*114 *susA*11; this strain carries mutations in genes *c*I, *int*, and *red* and a suppressible (*sus*) mutation in gene *A*. A strain designated λ imm^{21} att^{434} would represent a hybrid of phage λ which carries the immunity (*imm*) region of phage 21 and the attachment (*att*) region of phage 434. Host DNA insertions into viruses should be delineated by square brackets, and the genetic symbols and designations for such inserted DNA should conform to those employed for the host genome. Genetic symbols for phage λ can be found in reports by Echols and Murialdo (Microbiol. Rev. **42**:577–591, 1978) and Szybalski and Szybalski (Gene **7**:217–270, 1979).

"Mutant" versus "mutation." Authors are reminded of the distinction between a *mutation* (an alteration of the primary sequence of the genetic material) and a *mutant* (a strain carrying one or more mutations). One may speak about the mapping of a mutation, but one cannot map a mutant. Likewise, a mutant has no genetic locus, only a phenotype.

"Homology" versus "similarity." For use of terms that describe relationships between genes, consult the articles by Theissen (Nature **415**:741, 2002) and Fitch (Trends Genet. **16**:227–231, 2000).

"Homology" implies a relationship between genes that share a common evolutionary origin; partial homology is not recognized. When sequence comparisons are discussed, it is more appropriate to use the term "percent sequence similarity" or "percent sequence identity," as appropriate.

ABBREVIATIONS AND CONVENTIONS

Verb Tense

ASM strongly recommends that for clarity you use the **past** tense to narrate particular events in the past, including the procedures, observations, and data of the study that you are reporting. Use the present tense for your own general conclusions, the conclusions of previous researchers, and generally accepted facts. Thus, most of the abstract, Materials and Methods, and Results will be in the past tense, and most of the introduction and some of the Discussion will be in the present tense.

Be aware that it may be necessary to vary the tense in a single sentence. For example, it is correct to say "White (30) demonstrat*ed* that XYZ cells *grow* at pH 6.8," "Figure 2 show*s* that ABC cells fail*ed* to grow at room temperature," and "Air *was* removed from the chamber and the mice *died*, which *proves* that mice *require* air." In reporting statistics and calculations, it is correct to say "The values for the ABC cells *are* statistically significant, indicating that the drug inhibit*ed* . . . ."

For an in-depth discussion of tense in scientific writing, see p. 207–209 in *How To Write and Publish a Scientific Paper*, 5th ed.

Abbreviations

General. Abbreviations should be used as an aid to the reader, rather than as a convenience to the author, and therefore their **use should be limited**. Abbreviations other than those recommended by the IUPAC-IUB (*Bio-*

chemical Nomenclature and Related Documents, 1978) should be used only when a case can be made for necessity, such as in tables and figures.

It is often possible to use pronouns or to paraphrase a long word after its first use (e.g., "the drug" or "the substrate"). Standard chemical symbols and trivial names or their symbols (folate, Ala, Leu, etc.) may also be used.

It is strongly recommended that all abbreviations except those listed below be introduced in the first paragraph in Materials and Methods. Alternatively, define each abbreviation and introduce it in parentheses the first time it is used; e.g., "cultures were grown in Eagle minimal essential medium (MEM)." Generally, eliminate abbreviations that are not used at least three times in the text (including tables and figure legends).

Not requiring introduction. In addition to abbreviations for Système International d'Unités (SI) units of measurement, other common units (e.g., bp, kb, and Da), and chemical symbols for the elements, the following should be used without definition in the title, abstract, text, figure legends, and tables: DNA (deoxyribonucleic acid); cDNA (complementary DNA); RNA (ribonucleic acid); cRNA (complementary RNA); RNase (ribonuclease); DNase (deoxyribonuclease); rRNA (ribosomal RNA); mRNA (messenger RNA); tRNA (transfer RNA); AMP, ADP, ATP, dAMP, ddATP, GTP, etc. (for the respective 5′ phosphates of adenosine and other nucleosides) (add 2′-, 3′-, or 5′- when needed for contrast); ATPase, dGTPase, etc. (adenosine triphosphatase, deoxyguanosine triphosphatase, etc.); NAD (nicotinamide adenine dinucleotide); NAD^+ (nicotinamide adenine dinucleotide, oxidized); NADH (nicotinamide adenine dinucleotide, reduced); NADP (nicotinamide adenine dinucleotide phosphate); NADPH (nicotinamide adenine dinucleotide phosphate, reduced); $NADP^+$ (nicotinamide adenine dinucleotide phosphate, oxidized); poly(A), poly(dT), etc. (polyadenylic acid, polydeoxythymidylic acid, etc.); oligo(dT), etc. (oligodeoxythymidylic acid, etc.); UV (ultraviolet); PFU (plaque-forming units); CFU (colony-forming units); MIC (minimal inhibitory concentration); Tris [tris(hydroxymethyl)aminomethane]; DEAE (diethylaminoethyl); EDTA (ethylenediaminetetraacetic acid); EGTA [ethylene glycol-bis (β-aminoethyl ether)-*N*,*N*,*N*′,*N*′-tetraacetic acid]; HEPES (*N*-2-hydroxyethylpiperazine-*N*′-2-ethanesulfonic acid); PCR (polymerase chain reaction); and AIDS (acquired immunodeficiency syndrome). Abbreviations for cell lines (e.g., HeLa) also need not be defined.

The following abbreviations should be used without definition in tables:

amt (amount)
approx (approximately)
avg (average)
concn (concentration)
diam (diameter)
expt (experiment)
exptl (experimental)
ht (height)
mo (month)
mol wt (molecular weight)
no. (number)
prepn (preparation)
SD (standard deviation)
SE (standard error)
SEM (standard error of the mean)
sp act (specific activity)
sp gr (specific gravity)
temp (temperature)
tr (trace)
vol (volume)
vs (versus)
wk (week)
wt (weight)
yr (year)

Reporting Numerical Data

Standard metric units are used for reporting length, weight, and volume. For these units and for molarity, use the prefixes m, μ, n, and p for 10^{-3}, 10^{-6}, 10^{-9}, and 10^{-12}, respectively. Likewise, use the prefixes c for 10^{-2} and k for 10^3. Avoid compound prefixes such as mμ or μμ. Use μg/ml or μg/g in place of the ambiguous ppm. Units of temperature are presented as follows: 37°C or 324 K.

When fractions are used to express units such as enzymatic activities, it is preferable to use whole units, such as g or min, in the denominator instead of fractional or multiple units, such as μg or 10 min. For example, "pmol/min" is preferable to "nmol/10 min," and "μmol/g" is preferable to "nmol/μg." It is also preferable that an unambiguous form such as exponential notation be used; for example, "μmol g^{-1} min^{-1}" is preferable to "μmol/g/min." Always report numerical data in the appropriate SI units.

For a review of some common errors associated with statistical analyses and reports, plus guidelines on how to avoid them, see the article by C. Olsen (Infect. Immun. 71:6689–6692, 2003).

Isotopically Labeled Compounds

For simple molecules, labeling is indicated in the chemical formula (e.g., $^{14}CO_2$, ^3H_2O, and $H_2{}^{35}SO_4$). Brackets are not used when the isotopic symbol is attached to the name of a compound that in its natural state does not contain the element (e.g., ^{32}S-ATP) or to a word that is not a specific chemical name (e.g., ^{131}I-labeled protein, ^{14}C-amino acids, and ^{3}H-ligands).

For specific chemicals, the symbol for the isotope introduced is placed in square brackets directly preceding the part of the name that describes the labeled entity. Note that configuration symbols and modifiers precede the isotopic symbol. The following examples illustrate correct usage:

[^{14}C]urea
[2,3-^{3}H]serine
[γ-^{32}P]ATP
SV40 [^{32}P]DNA
L-[*methyl*-^{14}C]methionine
[α-^{14}C]lysine
UDP-[U-^{14}C]glucose
fructose 1,6-[1-^{32}P]bisphosphate

JVI follows the same conventions for isotopic labeling as the *Journal of Biological Chemistry*, and more-detailed information can be found in the instructions to authors of that journal (first issue of each year).

Guide for Authors

AIMS AND SCOPE

Virology publishes the results of original basic research on viruses of animals (vertebrate and invertebrate), plants, bacteria, and yeasts/fungi. We invite articles on all areas of research, including virus replication and gene expression, virus structure and assembly (including atomic structure), virus-cell interaction (including cellular changes as a consequence of viral infection), viral pathogenesis and immunity (at both molecular and organismal levels), viral vectors/gene therapy, and molecular aspects of prevention of viral infection. Papers describing results on emerging viruses and unconventional agents will receive special attention.

EDITORS

The editors and their areas of responsibility are given here

CATEGORIES AND TYPES OF ARTICLES

Papers will be published in *Virology* under one of the following subheadings:

- Virus Replication/Gene Expression
- Virus Structure and Assembly
- Virus-Cell Biology
- Viral Pathogenesis and Immunity
- Gene Therapy/Viral Vectors
- Emerging Viruses/Unconventional Agents

Virology publishes three forms of manuscripts: (a) regular manuscripts, including short but complete studies; (b) rapid communications; and (c) minireviews.

Regular manuscripts present the results of original basic research in all areas of virology (above) that break new ground and serve as a valuable addition to the literature in the field.

A Rapid Communication is a brief, definitive report of highly significant and timely findings in the field. Authors should indicate the submission as such, and if on preliminary inspection the editor believes the paper is of a nature to warrant this category, the paper will receive very rapid review and, if acceptable, will be published within an average of 8 weeks from receipt.

Minireviews bring cutting-edge developments and themes in the field to virologists, postdoctoral fellows, graduate students, and others interested in the field. The goal of these minireviews is to focus on a sharply defined topic in an interesting area in virology or on recent research (such as two or three papers coming in a specific area of virology). The objective is to make the information accessible to researchers who work in other areas of virology. Minireviews should be pithy, that is, should not cover the field in question comprehensively but rather address fundamental concepts, challenges, and problems in the field. In summary, virologists and others, both directly in and outside the area of the minireview, should benefit from reading these minireviews. The minireviews should provide a critical view of the field. Minireviews would also be an appropriate forum for introducing new viewpoints, indicating important issues to be addressed, and challenging concepts.

SPEED OF PUBLICATION

Peer Review Process: Each editor is responsible for having manuscripts reviewed and for making the final decision concerning the disposition. Each manuscript is reviewed by at least two reviewers. All manuscripts are reviewed as rapidly as possible, and an editorial decision is usually reached within 4 to 5 weeks of the manuscript's submission.

Publication Schedule: Accepted manuscripts are usually published in print within 12-14 weeks of acceptance, and within 4-5 weeks from receipt of authors corrected proofs. Please note that early publication online may occur within days of receipt of corrected proofs.

EDITORIAL POLICIES

There are no page charges for publication in *Virology*.

Authors should understand that space limitations make it impossible to publish manuscripts that describe work that does not break new ground conceptually, particularly if the work merely mirrors work done on a closely related virus without adding significant new knowledge, such as partial sequences of related viruses, evolutionary studies based on partial sequences, or descriptions of antigenic relationships and epitopes. Exceptions will be made, however, if these data reveal new insights into the fundamental properties of the virus.

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, without the written consent of the Publisher.

Publication of a research article in *Virology* is taken to imply that the authors are prepared to distribute freely to academic researchers for their own use any materials (e.g., viruses, cells, DNA clones, antibodies) used in the published experiments. Prior to publication, nucleotide sequences and protein sequences must be deposited with GenBank (Web site: http://www.ncbi.nlm.nih.gov/Genbank/) and an accession number obtained for publication in the manuscript. X-ray crystallographic coordinates must be deposited with the Protein Data Bank (Web site: http://www.rcsb.org/pdb/).

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NEW!
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The above represents a very brief outline of this form of submission. It can be advantageous to print this Guide for Authors section from the site for reference in the subsequent stages of article preparation.

Submission Checklist: You will be asked to submit:

- **Cover Letter:** Document (Word, WordPerfect, RTF, PDF, LaTeX) containing your cover letter to the Editors.
- **Response to Reviews** (Resubmissions Only): Document (Word, WordPerfect, RTF, PDF, LaTeX) detailing your response to the reviewers' and editor's comments of a previously rejected manuscript that you are resubmitting.
- **Manuscript:** Single word processing (Word, WordPerfect, RTF) or LaTeX file consisting of the title page, abstract, manuscript text, and any figure/table legends.
- **Tables:** Tables should be separate from the manuscript text and can be uploaded individually or consolidated into a single file. The file description you input when uploading your table must include the table number or range (e.g., Table 1, Tables 2-4).
- **Figures:** Figures should be uploaded individually as TIF or EPS files. Although other figure formats are allowed by the system (GIF, JPEG, Postscript, PICT, PDF, Excel, and PowerPoint), they will delay the production process should your manuscript be accepted. The file description you input below when uploading your figure must include the figure number (e.g., Fig. 2A).

Please submit, with the manuscript, the names and addresses of up to 6 potential referees.

FORMATS AND MANUSCRIPT STYLE

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced during typesetting. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use boldface, italics, subscripts, superscripts, etc. Do not embed graphically designed equations or tables, but prepare these using the word processor's facility. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. To avoid unnecessary errors you are strongly advised to use the spell checking function of your word processor. See also the section on preparation of electronic illustrations.

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ORGANIZATION AND GENERAL STYLE OF MANUSCRIPTS

Manuscripts should be written as concisely as possible with minimum repetition between Results and Discussion and Materials and Methods and figure legends. All figures must be of a quality such that the reviewers can judge the data.

(a) Regular Manuscripts

The organization shown below should be followed (in the order given):

The **title page** should contain the following elements:
The *title* should be concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulas where possible.
Author names and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author.
Corresponding author. Clearly indicate who is willing to handle correspondence at all stages of refereeing and publication, also postpublication. Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.
Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a present address (or permanent address) may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract. A concise and factual abstract is required (maximum length 150 words). The abstract should summarize the main findings of the paper. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

Keywords. Immediately after the abstract, provide a maximum of 10 keywords, avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing and searching purposes.

The **Introduction** should be succinct with no subheadings. It should contain material directly relevant to the research that is described and should state clearly the aims of the investigation in the light of related work. Fair citation of the work of others is essential. Authors are asked to use nomenclature approved by the International Committee for the Taxonomy of Viruses (ICTV) (Web site: http://www.ncbi.nlm.nih.gov/) the first time a virus name appears. Commonly used vernacular names may be used after viruses are first correctly identified. Genetic loci should be italicized; protein products of the loci are not italicized.

Results and **Discussion** may be divided by subheadings or may be combined into one section when substantial redundancy cannot be avoided in two separate sections or if a long discussion is not warranted. A Discussion section should be constructively interpretive and not restate experimental data.

Materials and methods should provide sufficient information to permit the work to be repeated and should be kept concise by referring to previously published procedures. With increasing studies on pathogenicity of viruses, it is important that the provenance of viruses be stated clearly.

Acknowledgments. Place acknowledgments, including information on grants received, before the references, in a separate section, and not as a footnote on the title page.

References should include only articles that have been published or are in press. Unpublished data, submitted manuscripts, or personal communications should be cited within the text. Personal communications should be documented by a letter of permission. Abstracts of work presented at meetings many not be cited. Names of authors should be mentioned in the text with year of publication in parentheses. References should be listed alphabetically at the end of the paper. Journal names should be abbreviated according to the Chemical Abstracts Service index: http://www.cas.org/.

Text. All citations in the text should refer to:

1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication.
2. Two authors: both authors' names and the year of publication.
3. Three or more authors: first author's name followed by "et al." and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: "as demonstrated (Allan, 1996a, 1996b, 1999; Allan and Jones, 1995). Kramer et al. (2000) have recently shown ...."

List. References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication.

Reference to a journal publication:
Park, J., Nadeau, P.E., Mergia, A., 2002. A minimal genome simian foamy virus type 1 vector system with efficient gene transfer. Virology 302, 236-244.

Reference to a book:

Hagag, N., Viola, M.V., 1993. Chromosome Microdissection and Cloning: A Practical Guide. Academic Press, San Diego.

Reference to a chapter in an edited book:
Mettam, G.R., Adams, L.B., 1999. How to prepare an electronic version of your article. In: Jones, B.S., Smith, R.Z. (Eds.), Introduction to the Electronic Age. E-Publishing Inc., New York, pp. 281-304.

Citations in the text. Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications should not be in the reference list, but may be mentioned in the text. Citation of a reference as "in press" implies that the item has been accepted for publication.

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